

SECURITY INFORMATION

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TO : Chief, Estimates Staff, ONE

DATE: 13 March 1953

FROM : Chief, Analysis Division, ORR

SUBJECT: Rationale behind use of bottleneck multiple of three in calculating economic cost to the Soviet Bloc of a severance of East-West trade.

1. In calculating the ruble cost to the Soviet Bloc of a cessation of imports two cost concepts have been employed. First, is the fairly straightforward calculation of the cost to the Bloc of producing a quantity of the import commodity equivalent to current levels of imports. Second, is the concept of the "bottleneck" cost which would include: (a) the value of the production of other commodities which would be lost by the cessation of imports of the specified commodity, (b) increases in costs of production of other products which would result from the cessation of imports of the specified commodity. An estimate was made of the "bottleneck" costs, i.e., the indirect cost in each year of the period during which the Soviet Bloc was replacing current levels of imports, expressed as a multiple of the value of current imports of the commodity.

2. The calculation of the "bottleneck costs" of a complete severance of East-West trade presented in the EIC contribution to NIE-59 involves two estimates, ~~which reflect an attempt to limit controversy over the estimated "bottleneck" costs.~~ First, it was estimated that one half of all Soviet Bloc imports (by value) possessed bottleneck characteristics and second, that the costs to the Soviet Bloc of a cessation of imports as measured by "lost" production, or by increased costs of production, of commodities other than the import item could be expressed as a multiple of the cost of replacing the import item denied the Bloc.

3. To arrive at the estimate that one half of all Soviet Bloc imports were "bottleneck" imports, it was determined by consultation with industrial and commodity analysts within ORR that current Bloc imports of foodstuffs, forest products, cotton and products, most non-ferrous metals, fuels, iron and steel products, fertilizers, and a sizeable fraction of miscellaneous products could be given up without "bottleneck" repercussions in the Bloc economy. These items totalled in excess of 50 percent of the value of Bloc imports (see table 4, p. 11 of ORR contribution to NIE-59, 15 September 1952). It was then assumed that the residual of 50 percent of Bloc imports possessed "bottleneck" characteristics. In effect, the calculation of the bottleneck costs attributes bottleneck characteristics to crude rubber accounting for 10.2 percent of total Bloc imports, wool and manufactures accounting for 10.7 percent and to all imports of machinery and transport equipment accounting for 21.7 percent of total Bloc imports. Such an estimate was thought to be generous in view of the substantial Soviet Bloc production in these categories. ~~However, it was hoped that such an estimate was sufficiently liberal to be non-controversial.~~

4. Also involved in the calculation of "bottleneck" costs was the estimate that the average multiple of the "bottleneck" costs to the value of the import commodities estimated to possess "bottleneck" characteristics was three. This

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estimate was obtained by questioning the material and industrial specialists within ORR branches to obtain estimates of the magnitude of the "bottleneck" costs for the commodities for which they were responsible. When it was explained that the estimate wanted was the average multiple for a full year after trade severance, and not a multiple applicable for the period immediately following trade severance; the largest estimate made was a multiple of five and the average of the estimates made was substantially less than three. Here again the factor chosen was, in terms of the available evidence, quite liberal and represents a concession by the EIC working group designed to limit controversy over the calculation.

5. When it was proposed that the original draft of NIE-59 be re-drafted, a request was made to the various IAC representatives that lists of "bottleneck" imports be submitted in order that analysts could again be asked to evaluate the "bottleneck" characteristics of such imports. The G-2 representative furnished such a list, which ~~presumably was a list of import commodities which would have relatively high "bottleneck" effects. This list~~ was subsequently submitted together with an appropriate questionnaire to ORR analysts to obtain impressions of the "bottleneck" multiple. The following estimates of the "bottleneck" multiple in the first year of trade severance were submitted.

Metal cutting machinery	4
Ball bearings	less than 2
Shipbuilding	no estimate
Transportation equipment	0-1
*Pyrites and sulphur	5
Natural rubber	.5
Wool	1.5

* Pyrites and sulphur were selected by the Chemicals Branch, D/M, ORR as the most appropriate example of a Soviet Bloc chemical import possessing bottleneck characteristics.

Electron tubes and components and electrical machinery which were included on the list of "bottleneck" imports were also submitted to the responsible branch in ORR, but due to changes in the personnel of this branch the required estimates of the "bottleneck" multiples were not made.

6. Other items submitted by G-2 included, "spare parts for general industrial and transportation equipment, general industrial construction and transportation equipment, diesel engines, components, including fuel injectors, and metal ores and manufactures." These classifications are so ~~exhaustive and broad~~ ~~encompassing~~, that it was not possible for the analysts concerned to calculate the "bottleneck" costs.

F. H. Golay
F. H. GOLAY

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